

WHAT IS CLAIMED IS:

1. A log comparison debug support system which inputs a log in which a series of events occurred as a result of the execution of a target program are recorded, and supports debugging by performing log comparison, the system comprising:

a partial log creating device configured to create a plurality of partial logs from the inputted log;

a master log creating device configured to create a master log by concatenating the partial logs;

a normalized log creating device configured to create normalized logs by normalizing said partial logs by use of the master log serving as a normalization reference;

a feature value computing device configured to compute feature values representing the degree of feature of the occurrence and nonoccurrence of said events for each of the normalized logs created by said normalized log creating device; and

a similarity computing device configured to compute, in a combination of a specific partial log and another partial log, the similarity between these partial logs by performing a specific operation based on said feature values.

2. The system of claim 1, further comprising a condition specifying device configured to specify begin and end events in said partial log and specify the

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extraction rule for extracting at least part of the event sequence sandwiched between the begin and end events.

3. The system of claim 1, wherein said feature value computing device computes one feature value in one normalized log by referring to the other normalized logs.

4. The system of claim 1, wherein said similarity computing device computes the similarity between said combination of partial logs by inner product operation of respective feature values of the normalized logs.

5. The system of claim 1, wherein said feature value computing device computes probability of occurrence or nonoccurrence of events as said feature value.

6. The system of claim 5, wherein said similarity computing device computes the similarity between said combination of partial logs by adding or subtracting of the absolute value of the logarithm of respective feature values of the normalized logs.

7. The system of claim 1, further comprising:  
a specifying device configured to specify one of said partial logs;  
a selecting device, coupled between said similarity computing device and the specifying device, configured to select another partial log which is similar to said specified log according to the

similarity computed by said similarity computing device.

8. A log comparison debug support system which inputs an operation log in which a series of events occurred as a result of the execution of a target program are recorded, and supports debugging by performing log comparison, the system comprising:

a partial log creating device configured to create a plurality of partial logs from the inputted operation log;

a master log creating device configured to input a source program of said target program to create a master log by expanding the source program;

a normalized log creating device configured to create normalized logs by normalizing said partial logs by use of the master log serving as a normalization reference;

a feature value computing device configured to compute feature values representing the degree of feature of the occurrence and nonoccurrence of said events for each of the normalized logs created by said normalized log creating device; and

a similarity computing device configured to compute, in a combination of a specific partial log and another partial log, the similarity between these partial logs by performing a specific operation based on said feature values.

9. The system of claim 8, wherein said master log

creating device comprises an expander configured to expand a description corresponding to a specific function in the source program, and create the result of the expansion as said master log.

- 5           10. The system of claim 9, wherein said expander expands a description of specific syntax including function calls and loops in said specific function.

- 10           11. The system of claim 8, further comprising a condition specifying device configured to specify begin and end events in said partial log and specify the extraction rule for extracting at least part of the event sequence sandwiched between the begin and end events.

- 15           12. The system of claim 8, wherein said feature value computing device computes one feature value in one normalized log by referring to the other normalized logs.

- 20           13. The system of claim 8, wherein said similarity computing device computes the similarity between said combination of partial logs by inner product operation of respective feature values of the normalized logs.

- 25           14. The system of claim 8, wherein said feature value computing device computes probability of occurrence or nonoccurrence of events as said feature value.

15. The system of claim 14, wherein said similarity computing device computes the similarity

16. The system of clam 8, further comprising:  
5 a specifying device configured to specify one of  
said partial logs;

a selecting device, coupled between said similarity computing device and the specifying device, configured to select another partial log which is similar to said specified log according to the similarity computed by said similarity computing device.

17. A method for supporting log comparison debugging, the method comprising:

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        inputting a log in which a series of events
15    occurred as a result of the execution of a target
        program are recorded;

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        creating a plurality of partial logs from the
inputted log;

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        creating a master log by concatenating the partial
20      logs;

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creating normalized logs by normalizing said  
partial logs by use of the master log serving as a  
normalization reference;

computing feature values representing the degree  
25 of feature of the occurrence and nonoccurrence of said  
events for each of the normalized logs; and

computing, in a combination of a specific partial

log and another partial log, the similarity between these partial logs by performing a specific operation based on said feature values.

18. A method for supporting log comparison debugging, the method comprising:

inputting an operation log in which a series of events occurred as a result of the execution of a target program are recorded;

creating a plurality of partial logs from the inputted operation log;

inputting a source program of said target program and creating a master log based on the source program by expanding the source program;

creating normalized logs by normalizing said partial logs by use of the master log serving as a normalization reference;

computing feature values representing the degree of feature of the occurrence and nonoccurrence of said events for each of the normalized logs; and

computing, in a combination of a specific partial log and another partial log, the similarity between these partial logs by performing a specific operation based on said feature values.

19. A computer program product configured to store program instructions for execution on a computer system enabling the system to perform:

inputting a log in which a series of events

occurred as a result of the execution of a target  
program are recorded;

creating a plurality of partial logs from the  
inputted log;

5 creating a master log by concatenating the partial  
logs;

creating normalized logs by normalizing said  
partial logs by use of the master log serving as a  
normalization reference;

10 computing feature values representing the degree  
of feature of the occurrence and nonoccurrence of said  
events for each of the normalized logs; and

computing, in a combination of a specific partial  
log and another partial log, the similarity between  
15 these partial logs by performing a specific operation  
based on said feature values.

20. A computer program product configured to store  
program instructions for execution on a computer system  
enabling the system to perform:

20 inputting an operation log in which a series of  
events occurred as a result of the execution of a  
target program are recorded;

creating a plurality of partial logs from the  
inputted operation log;

25 inputting a source program of said target program  
and creating a master log based on the source program  
by expanding the source program;

creating normalized logs by normalizing said partial logs by use of the master log serving as a normalization reference;

5 computing feature values representing the degree of feature of the occurrence and nonoccurrence of said events for each of the normalized logs; and

10 computing, in a combination of a specific partial log and another partial log, the similarity between these partial logs by performing a specific operation based on said feature values.